

**ABSTRACT OF THE DISCLOSURE**

This application relates to a dye composition for dyeing keratin fibers, for example human keratin fibers, such as hair, comprising, in an appropriate dyeing medium, at least one aldehyde precursor, at least one enzyme able to generate an aldehyde from the at least one aldehyde precursor and at least one heteroaromatic hydrazone. This application also concerns a method for dyeing keratin fibers using the dye composition, and a dye "kit" containing the dye composition.